IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1-11 as originally filed in PCT/EP03/06019 (canceled)

Claims 1-10 as annexed to the IPER (canceled)

12. (new) A method for operating stepper motors, comprising

a first operational mode for a normal motor operation in which an alternating current (I_L) is impressed into at least one of the coils (L) of the stepper motor, and

a second operational mode for detecting a reference position of the stepper motor from an increase of the load caused by driving the stepper motor against a mechanical stop, by comparing the level of a measuring current ($I_{S,EMK}$) flowing in the coil (L), with at least one lower threshold value,

wherein the level of the measuring current ($I_{S,EMK}$) is determined substantially by the phase of a voltage (U_{EMK}) which is counter induced by a rotor of the motor in the coil (L),

wherein the reference position is set and defined, respectively, when the measuring current ($I_{S,EMK}$) becomes smaller than the lower threshold value, and

wherein the second operational mode for the coil (L) is activated during a time window (Z) of the first

operational mode either by short-circuiting the coil (L) when the alternating current (I_L) impressed into the coil (L) approaches a zero crossing, or by reversing the polarity of the alternating current (I_L) impressed into the coil.

13. (new) The method according to claim 12, wherein the level of the measuring current ($I_{S,EMK}$) flowing through the coil (L) during the second operational mode is compared with at least one upper threshold value which is set in dependency on the velocity of the motor and which is greater than the lower threshold value, in order to detect a low load state of the motor when the measuring current ($I_{S,EMK}$) is greater than the upper threshold value.

14. (new) The method according to claim 12, wherein the lower threshold value is set in dependency on the velocity of the motor in order to detect a high load state when the measuring current ($I_{S,EMK}$) is smaller than the lower threshold value.

15. (new) The method according to claim 12, wherein the time window (Z) for the second operational mode is embedded into the first operational mode such that it is substantially symmetrically positioned relative to the zero crossing of the alternating current (I_L) which is

impressed into the related coil (L) during the first operational mode.

16. (new) The method according to claim 12, wherein the level of the measuring current ($I_{S,EMK}$) flowing in the short-circuited coil (L) is detected from a voltage drop ($U_{S,EMK}$) at a measuring resistance (R_S) and is compared with threshold values in the form of voltages (U_{SO}, U_{SU}).

17. (new) A circuit arrangement for operating stepper motors, especially according to a method according to one of the preceding claims, comprising

a device (S; M, R_S; C) for determining a reference position of the stepper motor from an increase of the load which is caused by driving the stepper motor against a mechanical stop, with a measuring circuit (M) for comparing the level of a measuring current ($I_{S,EMK}$) flowing in a coil (L) of the motor,

wherein the level is substantially determined by the phase of a voltage (U_{EMK}) which is counter induced by a rotor of the motor in the coil (L), with at least one lower threshold value when either the alternating current (I_L) which is impressed into the coil (L) during a normal motor operation approaches a zero crossing and the coil (L) is short-circuited, or the direction of the alternating current is reversed.

18. (new) The circuit arrangement according to claim 17, wherein the device (S; M, R_S; C) comprises a measuring resistance (R_S) and the measuring circuit (M) comprises a comparator (K) for comparing a measuring voltage ($U_{S,EMK}$) which drops at the measuring resistance (R_S) by the measuring current ($I_{S,EMK}$), with the at least one lower threshold value (U_{SU}).

19. (new) The circuit arrangement according to claim 18, wherein the device (S; M, R_S; C) comprises a control circuit (C) and the measuring circuit (M) comprises a digital-to-analog converter (DAC), the input of which is connected with an output of the control circuit (C) and the output of which is connected with an input of the comparator (K) for applying the at least one lower and an upper threshold value (U_{SO}, U_{SU}), wherein the threshold values are set in dependency on the rotation velocity of the motor and are supplied by the control circuit (C) in order to detect an operating state and a load state, respectively, by comparing the measuring voltage ($U_{S,EMK}$) with the threshold values.

20. (new) The circuit arrangement according to claim 19, in wherein control circuit (C) is provided for controlling a switch (S) for periodically switching over between the first and the second operational mode in dependency on the

frequency of the alternating current (I_L) which is impressed into the coil.

21. (new) The computer program comprising program code means for conducting a method according to claim 12 when the program is conducted on a micro-computer.